**M E M O R A N D U M**

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**DATE:** February 15, 2012

**SUBJECT:** Operational Position Statement for the Week of Feb 14 – Feb 20, 2012

The U.S. Army Corps of Engineers (USACE) is responsible for managing Lake Okeechobee water levels and makes operational decisions about whether to retain water or release water based on their regulation schedule release guidance. The USACE makes this decision taking into account the best available science and data provided by its staff and a variety of partners, which includes the South Florida Water Management District (SFWMD).

The SFWMD team has discussed the system wide environmental conditions, the water supply conditions, and has evaluated the overall status of the water management system. Detailed reports are available at the SFWMD's Operational Planning internet page.

Weather and Climate

Rainfall during the past week totaled 0.59 inches district wide (through 7am Feb 14th). February rainfall has totaled 1.32 inches, which is 125% of average to date. For the past 30 days rainfall has been 70% of average. The SFWMD precipitation outlook for the next ten days (Feb 15-Feb 24) is below-average with low confidence. The 19-Jan CPC precipitation outlook for February indicates increased chances of below-normal rainfall. For the remainder of the 2011-2012 dry season, the CPC outlook continues to show increased chances for below-normal rainfall associated with La Nina conditions.

Upper and Lower Kissimmee Basins

Stages in the Kissimmee Chain of Lakes are at or within 0.3 feet of their respective flood regulation schedules or the temporary snail kite recession targets. The temporary snail kite recession targets have been implemented for Lakes Toho, East Toho, Kissimmee, Cypress and Hatchineha. Lake Kissimmee stage continues to recede due to the dry weather and S-65 environmental releases, which are made to the Kissimmee River per the Interim Operational Schedule and Release Rules for Lake Kissimmmee-Hatchineha-Cypress. Discharge at S-65 to the Kissimmee River averaged about 900 cfs for the week ending Feb 12th, up slightly from last week's 860 cfs. Discharge from the Kissimmee River to Lake Okeechobee via S-65E averaged about 710 cfs for the week ending Feb 12th, slightly down from the previous week's 750 cfs.

Lake Okeechobee Stage and Regulation Schedule

The Feb 13th, 2012 Lake Okeechobee stage (reported by the USACE on February 14th) was 13.13 feet NGVD, down (0.08 feet lower) compared with 7-days ago. The February 13th stage was about 0.3 feet lower than it was a month ago and about 0.8 feet higher than a year ago. The current stage remains about 1.4 feet lower than the historical average for this date.

This week the Tributary Hydrologic Conditions is in the "dry" classification (LORS-2008 classifications). The 14-day average Lake Okeechobee Net Inflow was -896 cfs (dry) through February 12th. The latest Palmer Index was -3.02 (very dry). The February 13th Lake stage was

about 0.5 feet above the bottom of the Baseflow Sub-band and about 1.1 feet above the Water Shortage Management Band.

The LORS-2008 release guidance suggests no releases to the WCAs due to the dry tributary hydrologic conditions. LORS-2008 release guidance also suggests up to 450 cfs at S-79, and up to 200 cfs at S-80. Those releases are baseflow releases designed to regulate Lake stages. The SFWMD's Adaptive Protocol provides the necessary guidance for the appropriate release amount. Refer to the recommendations section below.

Water Supply Risk Indicators

The risk status for Lake Okeechobee Area is the same as last week. Four of the six LOSA water supply risk indicators are in the "medium risk" category; the other two are in the "high risk" category: the CPC precipitation outlook for the upcoming 3 months, and the Palmer Index. The risk status for all WCAs and Lower East Coast service areas remains within the "low risk" category.

The South Florida Water Management District Governing Board voted on November 10 to rescind a series of water shortage orders that restricted landscape irrigation and placed mandatory reductions of agricultural and other large water uses. The action was taken in response to improved water resource conditions throughout the District's 16-county region following the fourth-wettest October on record. With long-term forecasts still calling for below-average rainfall during the 2011-2012 dry season, the Governing Board also declared a water shortage warning to encourage continued vigilance and voluntary water conservation.

Groundwater Levels

Groundwater levels increased over parts of the District this week that received rainfall. Most of the United States Geological Survey (USGS) real-time wells in the upper Kissimmee Basin (KB) within the District are at their lowest 10th to 30th percentile levels for this time of year. Wells in the lower KB are largely still at median levels. Stages in the Upper East Coast (UEC) canals C-23, C-24, and C-25 are at 22.34, 20.00, and 21.59 ft NGVD, respectively, well above the 14 ft NGVD agricultural cutoff level. Groundwater levels in the UEC in most wells are at median levels for this time of year. Biscayne aquifer water elevations in the Lower East Coast (LEC) rose in most USGS stations. The majority of LEC wells are in their highest 10th to 30th percentile range for this time of year. Wells in south Miami-Dade County and Homestead that received a boost from last week's rains have already started declining rapidly. For more detailed information, refer to the Feb 14, 2012 Water Supply Report, which is posted at www.sfwmd.gov.

Everglades WCAs

During the past week WCA water levels at the gages used for the regulation schedules rose due to rainfall. Rainfall produced stage reversals at some locations. The exception was WCA-2A stage which remained at similar levels. Rainfall amounts ranged from 0.62 inches in WCA-2A, to 1.60 inches in WCA-2B. WCA-1 stage remains about 0.5 feet below its lower (Zone B) regulation schedule. WCA-2A marsh gage (2-17) remains about 0.8 feet above schedule. WCA-3A stage remains about 0.1 feet below the bottom of the regulation schedule's Zone E1.

Water releases from WCA-3A to ENP per the Shark Slough Rainfall Plan continue. The Rainfall Formula amount this week is 206 cfs; target flow is also 206 cfs since the average WCA-3A stage is below its regulation schedule, thus requiring no regulatory/supplemental flow component. Target flow is up from last week's 177 cfs. S-333 is open to deliver 55% of the target flow to Northeast Shark River Slough (stage at G-3273 is 6.38 ft, is below the trigger stage of 6.8 feet, NGVD). S-12D is open to pass 45% of the target flow. S-12A, S-12B and S-12C are closed per the federal operating rules (Interim Operating Plan {IOP}).

St. Lucie Estuary

The estuary received no inflow via S-80 from Lake Okeechobee during the past week. No inflow from C-23 and C-24 occurred. 7-day average salinity conditions in the SLE have increased during the past week, and the 30-day moving average remains within the preferred range at the US-1 Bridge; conditions are classified as good for oysters for this time of year. It is recommended that the estuary should not receive inflows from the Lake or from C-44 basin runoff. To conserve water supplies it is recommended that the USACE continue their current operation to direct C-44 basin runoff westward to Lake Okeechobee, and not eastward through S-80 to tide.

Caloosahatchee Estuary

Releases have been made from the Lake via S-77 and to the Caloosahatchee Estuary via S-79 during the past nine weeks (since December 16, 2011) per the Lake Okeechobee Adaptive Protocol (AP) recommendation. The 30-day moving average surface salinity has risen to about 6.9 psu at Val I75 (was 6.3 psu last week) and 13.1 psu at Ft. Myers (was 13.0 psu last week). Salinity conditions in the estuary are considered to be poor for tape grass and fair for oysters considering their salinity preference and location in the estuary. Releases at S-79 averaged about 631 cfs during the 11-day period (Jan 27 – Feb 6), which is 30% more than the target flow of 450 cfs (USACE tailwater sensor malfunction). Flow releases of 450 cfs and greater have not been sufficient to lower salinity at Val I75 below 5 psu. It is not clear how much water would be needed to effectively lower salinity below 5 psu at Val I75. The February 14th salinity forecast (assuming baseflow releases stop) indicates the 30-day moving average salinity at Val I-75 will increase during the next two weeks, and will continue to exceed 5 psu.

The following describes the release guidance per the Final Adaptive Protocols for Lake Okeechobee Operations (September 16, 2010). Each Tuesday the Coastal Ecosystem Section reviews the salinity conditions in the Caloosahatchee estuary and forecasts the predicted salinity for 14 days into the future at Val I75. The criterion for when the estuary needs water depends on the two week predicted salinity at Val I75 being at least 5 psu. Therefore according to the salinity criterion, the estuary needs freshwater inflow at S-79, supplemented from Lake Okeechobee as necessary.

The upper branch of the Adaptive Protocol release guidance flowchart applies since the stage is within the Baseflow Subband of the regulation schedule. Currently there is less than a 50% chance that the Lake stage will fall below elevation 11.0 ft, NGVD, before the end of the dry season. Correspondingly, the release guidance suggests releases up to 450 cfs at S-79, supplemented as needed with Lake Okeechobee releases at S-77.

Recommendation to the USACE

The Adaptive Protocol guidance suggests releases at S-79 up to 450 cfs, supplemented as needed from Lake Okeechobee. The past nine weeks of 450 cfs average release have helped to limit high salinities at Val-I75, however there is a rising trend in daily salinities and a slightly increasing trend in the 30-day moving average salinity.

Therefore, the SFWMD recommends that the USACE make another 450 cfs average release at S-79, this time for a 10-day period starting at 07:00 Friday, February 17th, and ending at 07:00 on Monday, February 27th. A 10-day release is recommended to allow relatively larger discharge rates during the first half of the 10-day period. The recommended daily S-79 release schedule is provided below. The SFWMD also recommends that the USACE continue their standard operation to allow runoff from the C-44 basin (S-308 to S-80) to backflow to Lake Okeechobee via S-308 rather than discharge to tide via S-80.

| Day | Start Date & Time | S-79 cfs |
|---|---|---|
| 1 | 2/17/2012 07:00 | 1100 |
| 2 | 2/18/2012 07:00 | 1600 |
| 3 | 2/19/2012 07:00 | 850 |
| 4 | 2/20/2012 07:00 | 500 |
| 5 | 2/21/2012 07:00 | 350 |
| 6 | 2/22/2012 07:00 | 100 |
| 7 | 2/23/2012 07:00 | 0 |
| 8 | 2/24/2012 07:00 | 0 |
| 9 | 2/25/2012 07:00 | 0 |
| 10 | 2/26/2012 07:00 | 0 |
| 10-day | Sum | 4500 |
| 10-day | Mean | 450 |